



## Site Description

### McGinness Hills

(updated 2010)

**Geologic setting:** McGinness Hills was first explored for gold in the 1980s (Wendell, 1985; Casaceli and others, 1986). The name is taken from a triangulation station east of Nevada Highway 306 (formerly highway 21), ~17 km north of U.S Highway 50.

There are two ages of hydrothermal alteration at McGinness Hills: a high-sulfidation system dated to 35 Ma and a low-sulfidation (quartz-adularia or hot-springs) system dated to 3.2 and 2.2 ( $\pm 0.4$ ) Ma by K-Ar methods (Casaceli and others, 1986). The Late Pliocene mineralization is associated with opaline and chalcedonic sinter as well as quartz-adularia veins. The sinter, which covers an area of ~0.5 km<sup>2</sup>, is located east of a concealed northerly-striking fault. That fault is probably part of the system controlling the eastern Toiyabe Range (Casaceli and others, 1986). Fault scarps of similar strike cut Quaternary fan deposits ~2.5 km north (Stewart and McKee, 1968), and further north, there is evidence for at least one faulting event no older than late Pleistocene (Lidke, 2000).

### Geothermal features:

In 2004, Newcrest Resources encountered hot water during exploration drilling at the McGinness Hills gold property. The drill holes are located in SE $\frac{1}{4}$  NW $\frac{1}{4}$  Sec. 15, T20N, R45E (Barton Spring 7.5-minute topographic map). Each 300-meter exploration hole punctured the sinter cap (Fig. 4, Casaceli and others, 1986) and intercepted near-boiling waters (up to 88°C). Geysering action was observed in one hole. Recognizing the significance of the discovery, Newcrest sampled hot artesian water from two drill holes, which yielded quartz geothermometers of 151° and 193°C (no steam loss, Fournier, 1977, 1981) and K-Na-Ca-Mg geothermometers of 209° and 214°C (Fournier and Potter, 1979; Fournier and Truesdell, 1973). (Coolbaugh and others, 2006)

**Leasing information:** Ormat leases the McGinness Hills property, and announced in November 2009, a 30MW PPA with NV Energy to furnish 30 megawatts (MW). The power plant is currently (2010) under construction.



University of Nevada, Reno



Nevada Bureau  
of Mines  
and Geology

## Site Description

Bibliography:

